

**IN THE CLAIMS:**

Please amend the claims as follows:

1. **(Currently Amended)** A polymer electrolyte membrane fuel cell, comprising:

a seal formed from a liquid thermosetting sealing agent, and  
a lamination of separators and a membrane electrode assembly tightly sealed  
with the seal, said seal formed by applying the liquid thermosetting sealing agent into a  
gap, and having gaps formed between each separator and the membrane electrode  
assembly, and tightly sealed with said seal, said

~~seal formed by applying the liquid thermosetting sealing agent into said gaps~~  
~~between each separator and the membrane electrode assembly, and then thermally~~  
~~curing~~

thermally curing the liquid thermosetting sealing agent at a temperature in the a  
range of from 100 to 130°C over a period of from 1 to 5 hours,

the liquid thermosetting sealing agent is based on a silicone series elastomer or  
isobutylene series elastomer, and

the a viscosity of said the liquid thermosetting sealing agent at the application  
being from is from 1,000 to 9,000 Pa.s, wherein upon curing, the seal has a permanent  
deformation of 60% or less when thermally aged at 90°C for 100 hours to retain the gap  
upon sealing.

2. **(Currently Amended)** The polymer electrolyte membrane fuel cell as  
claimed in claim 1, wherein the a controlled temperature range for the curing condition

of said the liquid thermosetting sealing agent for the polymer electrolyte membrane fuel cell is a predetermined temperature of  $\pm 5^{\circ}\text{C}$ .

3. **(Currently Amended)** The polymer electrolyte membrane fuel cell as claimed in claim 1, wherein the a controlled temperature range for the curing condition of said the liquid thermosetting sealing agent for the polymer electrolyte membrane fuel cell is  $120^{\circ}\text{C} \pm 5^{\circ}\text{C}$ .

4. **(Currently Amended)** The polymer electrolyte membrane fuel cell as claimed in claim 1, wherein the a hardness of the liquid thermosetting sealing agent for the polymer electrolyte membrane fuel cell after curing measured according to a hardness test using a durometer at shore A defined in JIS K 6253 is in the a range of from 30 to  $70^{\circ}\text{C}$ .

5. **(Canceled)**

6. **(Currently Amended)** A single cell comprising making up a polymer electrolyte membrane fuel cell as claimed in claim 1, wherein in the lamination of separators and membrane electrode assembly, the gaps gap between each separator and the membrane electrode assembly is tightly sealed with said seal, said seal formed by thermally curing the liquid thermosetting sealing agent in the range of from 100 to  $130^{\circ}\text{C}$  over a period of from 1 to 5 hours as claimed in any one of claims 1 to 4.

7. **(Currently amended)** A process for producing a single polymer electrode fuel cell, comprising: a seal formed from a liquid thermosetting sealing agent, and a the lamination of separators and a membrane electrode assembly tightly sealed with the seal, the seal formed by applying the liquid thermosetting agent into a gap formed, and having the gaps between each separator and the membrane electrode

assembly tightly sealed with a seal, which comprise the process comprising the following steps:

a step for applying the liquid thermosetting sealing agent into the gap formed between each separator and the membrane electrode assembly at an application rate preset depending upon the viscosity of the liquid thermosetting sealing agent, and width and height of a resulting seal;

thermally curing the liquid thermosetting sealing agent at a temperature in the range from 100 to 130°C over a period of from 1 to 5 hours;

the liquid thermosetting sealing agent being based on a silicone series elastomer or isobutylene series elastomer, and to a polymer electrolyte membrane fuel cell as claimed in any one of claims 1 to 4 between each of the separator and the membrane electrode assembly at an application rate preset depending upon the viscosity of said liquid thermosetting sealing agent at application is from 1,000 to 9,000 Pa.s for the polymer electrolyte membrane fuel cell, and the width and the height of the resulting seal; and

a step for curing said liquid thermosetting sealing agent is based on a silicone series elastomer or isobutylene series elastomer, and the viscosity of said liquid thermosetting sealing agent during application is from 1,000 to 9,000 Pa.s, wherein upon curing, the seal has a permanent deformation of 60% or less when thermally aged at 90°C for 100 hours to retain the gap upon sealing agent for the polymer electrolyte membrane fuel cell at a temperature range of from 100 to 130°C for a predetermined period of time.

Claims 8-10. (Canceled)